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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,228	03/23/2004	Kimihiko Nishioka	050931-0308962	1701
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EXAMINER				
CUTLER, ALBERT H				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/806,228

Applicant(s)

NISHIOKA ET AL.

Examiner

ALBERT H. CUTLER

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 49-62 and 73-75 is/are pending in the application.
- 4a) Of the above claim(s) 51-55, 57 and 59-61 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 49, 50, 56, 58, 62 and 73-75 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is responsive to communication filed on August 5, 2010. Claims 49-62 and 73-75 are pending in the application. Claims 51-55, 57 and 59-61 are withdrawn as being directed toward a non-elected species. Claims 49, 50, 56, 58, 62 and 73-75 have been examined by the Examiner.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 5, 2010 has been entered.

Response to Arguments

3. Applicant's arguments with respect to claims 49, 50, 56, 58, 62 and 73-75 have been considered but are moot in view of the new ground(s) of rejection.

4. MPEP 821.04 recites, "The propriety of a restriction requirement should be reconsidered when all the claims directed to the elected invention are in condition for allowance, and the nonelected invention(s) should be considered for rejoinder." As not all the claims directed to the elected invention are in condition for allowance, Applicant's request for rejoinder will not be considered at this time.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 49, 50, 58, 62, 73/49, 73/62, 75/49 and 75/62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuyama et al. (US 5,825,408) in view of Van Berkel (US 5,451,766).

Consider claim 49, Yuyama et al. teaches:

An optical apparatus (figures 1 and 2) having a telephone function (Figures 1 and 2 depict a portable television receiver which has a camera section (6, column 3, lines 55-66, column 5, lines 36-45). Within the device, image data is modulated into an audio signal and sent over a telephone line (column 5, lines 46-54). Note that in alternate embodiments shown in figures 4 and 17, the telephone receiver is connected to the

portable television receiver, and data can be output directly over a telephone line.)
comprising:

an optical system with an optical element (lens, 25, column 5, lines 35-39) that uses no polarizing plate, and forms an image whose brightness is independent of a polarized direction of incident light (The lens is used to focus images onto a CCD (26), column 5, lines 39-42. As the optical element is a lens, it requires no polarizing plate, and forms an image whose brightness is independent of a polarized direction of incident light.);

an image pickup device (CCD, 26) for picking up an image formed by said optical system (The CCD (26) picks up images focused by the lens (25), column 5, lines 35-45.);

a display (liquid-crystal display section, 5) for displaying a picked up image (The display section (5) displays image data taken by the camera section (6) and image data already stored in memory, column 4, lines 51-56.);

and a memory (buffer memory, 30) for storing the picked up image (The image data is compressed and stored in the buffer memory (30), column 6, lines 3-15.).

However, Yuyama et al. does not explicitly teach an optical element having a variable focal length characteristic, or that a single focusing element makes variable the focal point of said optical element having the variable focal length characteristic.

Van Berkel similarly teaches an images sensor (figures 1 and 3) for forming images in a conventional optical camera (column 2, lines 59-66, column 3, lines 22-32, column 5, lines 1-10).

However, in addition to the teachings of Yuyama et al., Van Berkel teaches that the optical system for the image sensor has an optical element (second substrate, 7, electro-optical material, 8, figure 1) having a variable focal length characteristic (The effective focal length of the lens elements (6) of the second substrate (7) is adjusted by applying an electrical potential across the electro-optic material (8), column 3, lines 3-5, column 4, lines 1-19.). The optical element (7, 8) uses no polarizing plate (see figure 1), and does not include a lens element which moves along an optical axis as the focal length is changed by altering an applied electric potential, column 4, lines 3-19.). Additionally, a single focusing element (electro-optical material, 8) makes variable the focal point of said optical element (column 3, lines 3-5, column 4, lines 1-19).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to replace the image sensor taught by Yuyama et al. with the image sensor including the variable optical element taught by Van Berkel for the benefit of making the focal length adjustable and not completely dependent upon the construction of the lenses (Van Berkel, column 1, lines 20-30).

Consider claim 50, and as applied to claim 49 above, Yuyama et al. further teaches a viewfinder (display section, 5) for determining an image pickup range (The viewfinder (5) displays "the video through image", column 7, lines 50-53.).

Consider claim 58, and as applied to claim 49 above, Yuyama et al. further teaches a microprocessor (CPU, 34, figure 3, column 6, lines 41-48).

Consider claim 62, Yuyama et al. teaches:

An optical apparatus (figures 1 and 2) having a telephone function (Figures 1 and 2 depict a portable television receiver which has a camera section (6, column 3, lines 55-66, column 5, lines 36-45). Within the device, image data is modulated into an audio signal and sent over a telephone line (column 5, lines 46-54). Note that in alternate embodiments shown in figures 4 and 17, the telephone receiver is connected to the portable television receiver, and data can be output directly over a telephone line.) comprising:

an optical system with an optical element (lens, 25, column 5, lines 35-39) that uses no polarizing plate, and forms an image whose brightness is independent of a polarized direction of incident light (The lens is used to focus images onto a CCD (26), column 5, lines 39-42. As the optical element is a lens, it requires no polarizing plate, and forms an image whose brightness is independent of a polarized direction of incident light.);

an image pickup device (CCD, 26) for picking up an image formed by said optical system (The CCD (26) picks up images focused by the lens (25), column 5, lines 35-45.);

a display (liquid-crystal display section, 5) for displaying a picked up image (The display section (5) displays image data taken by the camera section (6) and image data already stored in memory, column 4, lines 51-56.);

a memory (buffer memory, 30) for storing the picked up image (The image data is compressed and stored in the buffer memory (30), column 6, lines 3-15.); and

a microprocessor (CPU, 34, figure 3, column 6, lines 41-48).

However, Yuyama et al. does not explicitly teach an optical element having a variable focal length characteristic, or that a single focusing element makes variable the focal point of said optical element having the variable focal length characteristic.

Van Berkel similarly teaches an images sensor (figures 1 and 3) for forming images in a conventional optical camera (column 2, lines 59-66, column 3, lines 22-32, column 5, lines 1-10).

However, in addition to the teachings of Yuyama et al., Van Berkel teaches that the optical system for the image sensor has an optical element (second substrate, 7, electro-optical material, 8, figure 1) having a variable focal length characteristic (The effective focal length of the lens elements (6) of the second substrate (7) is adjusted by applying an electrical potential across the electro-optic material (8), column 3, lines 3-5, column 4, lines 1-19.). The optical element (7, 8) uses no polarizing plate (see figure 1), and does not include a lens element which moves along an optical axis as the focal length is changed by altering an applied electric potential, column 4, lines 3-19.). Additionally, a single focusing element (electro-optical material, 8) makes variable the focal point of said optical element (column 3, lines 3-5, column 4, lines 1-19).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to replace the image sensor taught by Yuyama et al. with the image sensor including the variable optical element taught by Van Berkel for the benefit

of making the focal length adjustable and not completely dependent upon the construction of the lenses (Van Berkel, column 1, lines 20-30).

Consider claim 73, and as applied to claims 49 and 62, respectively, above, Yuyama et al. does not explicitly teach the member which makes the focal point variable.

Van Berkel further teaches that said member (8) which makes the focal point variable is a liquid crystal layer ("a suitable liquid crystal material", column 3, lines 56-61, figure 1).

Consider claim 75, and as applied to claims 49 and 62, respectively, above, Yuyama et al. does not explicitly teach the member which makes the focal point variable.

Van Berkel further teaches that said member (8) which makes the focal point variable is a twist nematic liquid crystal layer ("generally a twisted nematic liquid crystal", column 3, lines 56-61).

8. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yuyama et al. in view of Van Berkel, as applied to claims 49 and 62 above, and further in view of Hamblen (US 5,745,289).

Consider claim 56, and as applied to claim 49 above, the combination of Yuyama et al. and Van Berkel does not explicitly teach that the optical apparatus comprises a diffractive optical element.

Hamblen similarly teaches a lens (L1, figure 1) of an optical system of a camera (See column 1, lines 12-17 and lines 64-67, column 3, lines 18-43).

However, in addition the teachings of Yuyama et al. and Van Berkel, Hamblen teaches that a lens (L1, figure 1) of the optical system comprises a diffractive optical element ("DOE", column 1, lines 5-17, column 3, lines 18-20).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a diffractive optical element as taught by Hamblen in the optical system taught by the combination of Yuyama et al. and Van Berkel for the benefit of correcting for spherical and chromatic aberration as well as aberration due to thermal expansion and contraction (Hamblen, column 1, lines 12-17).

9. Claims 74/49 and 74/62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuyama et al. in view of Van Berkel, as applied to claims 49 and 62 above, and further in view of Levy (US 5,708,522).

Consider claim 74, and as applied to claims 49 and 62, respectively, above, Yuyama et al. does not explicitly teach the member which makes the focal point variable.

Van Berkel further teaches that said member (8) which makes the focal point variable is a liquid crystal layer ("a suitable liquid crystal material", column 3, lines 56-61, figure 1).

However, the combination of Yuyama et al. and Van Berkel does not explicitly teach that said member which makes the focal point variable is a polymer dispersive liquid crystal.

Levy is similar to Yuyama et al. and Van Berkel in that Levy teaches using a variable optical element (6, figure 2E) in a camera system (column 9, lines 1-42).

However, in addition to the teachings of Yuyama et al. and Van Berkel, Levy teaches that the variable optical element comprises a polymer dispersive liquid crystal layer (column 7, lines 4-19, column 9, lines 39-42).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the member taught by the combination of Yuyama et al. and Van Berkel comprise a polymer dispersive liquid crystal layer as taught by Levy for the benefit of minimizing the amount of parts by eliminating the need for a polarizer (Levy, column 9, lines 39-42).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALBERT H. CUTLER whose telephone number is (571)270-1460. The examiner can normally be reached on Mon-Thu (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Albert H Cutler/
Examiner, Art Unit 2622